

KARAKTERISTIK ISOTERM SORPSI AIR PADA TEPUNG SINGKONG TERFERMENTASI ANGKAK

WATER SORPTION ISOTHERM CHARACTERISTICS OF FERMENTED CASSAVA FLOUR BY RED YEAST RICE

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ABSTRACT

This research aims to determine moisture sorption isotherm curves, mathematical models and moisture sorption isotherm characteristics of fermented cassava flour by red yeast rice. Mathematical models which are used, such as Guggenheim Anderson deBoer (GAB), Brunauer Emmet Teller (BET) and Caurie are tested the accuracy model with Mean Relative Deviation (MRD). Result of the study shows that the moisture sorption isotherm curve of fermented cassava flour by red yeast rice has the sigmoid form (type II). The best mathematical model of fermented cassava flour by red yeast rice is GAB model with MRD at temperature 30°C, 35°C and 40°C are 4.95%, 3.82% and 4.21%, and Caurie model at temperature 40°C is 4.72%. Moisture sorption isotherm characteristic of fermented cassava flour by red yeast rice includes primary bound water at temperature 30°C, 35°C and 40°C in GAB model are 5.56%, 5.50% and 5.79%, BET model are 4.49%, 4.48% and 4.93%, while Caurie model are 5.98%, 5.97% and 5.08%, secondary bound water is 5.75% and tertiary bound water is 9.95%, surface area at temperature 30°C, 35°C and 40°C are 126.07 m²/g, 129.49 m²/g and 88.52 m²/g, enthalpy and entropy of water sorption processes decreased when moisture content increased.

Keywords : Cassava Flour, Mathematical Model, Red Yeast Rice, Thermodynamic, Water Sorption Isotherm